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Path from Urgent Operational Need to Program of Record

Eileen P. Whaley and Dana Stewart

The United States went to war in the Middle East with a warfighter partially equipped to defeat the ever-evolving threats the enemy brought into the operational theater. In response, units were equipped with urgent, unique solutions that countered the threat. The vulnerability of units in urban hostile situations is one example that led to the development of the Lethal Miniature Aerial Munition System to improve survivability for the troops. The solutions became enduring capabilities, leading the way and bringing a program from fulfilling an urgent need to a Program of Record, with emphasis on the Capabilities Development for Rapid Transition. This article addresses current policies, procedures, processes, and required actions associated with that effort.

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"Our front-line forces must be supported by a modern system that quickly meets their needs, not a slow and lumbering bureaucracy better suited to the last century. As important, our military men and women and their families deserve to know that we are giving them the best possible equipment when they need it."

(Biden, Bond, Rockefeller, & Kennedy, 2008)

Identifying the Problem

In 2002, the U.S. Army was fully engaged on the battlefield in Afghanistan with a combat operation called Operation Enduring Freedom (OEF). During the course of OEF, soldiers and commanders identified urgent needs requiring immediate solutions. The existing Army acquisition process, with complex documentation requirements and extended life cycles for materiel development, made it difficult to satisfy these identified urgent equipping needs in a timely manner.

In 2003, the United States entered into Iraq, in another combat operation called Operation Iraqi Freedom (OIF) where the soldiers and field commanders continued to identify specific capability requirements to meet the emergent threat. Out of those identified capability gaps from OEF and OIF, it became clear that a way to create a process where capabilities could be developed faster was needed. According to Office of the Director of the Army Staff (2011) Army Posture Statement, many of the materiel solutions identified and provided to the warfighters to satisfy urgent needs worked well in theater. Identifying those capabilities worthy of retaining and integrating into the force resulted in the Army instituting a new process called the Capabilities Development for Rapid Transition (CDRT). The CDRT process (Accelerated Capabilities Division [ACD], 2012) is intended to examine and identify the best non-standard materiel solutions brought into the field to satisfy an urgent need, and determine if the equipment should be retained, sustained, or terminated (Department of the Army [DA], 2011). To be able to provide long-term funding and oversight, retained and sustained equipment needs to be identified as a Program of Record (POR). Therefore, while it was acceptable to acquire the equipment outside of the formal acquisition process, the formal structure assigned to a POR is more recognizable and desirable for maintaining and sustaining the equipment. Some urgent needs or rapid acquisition programs will not go through the CDRT,

but will become PORs. During the course of research, it was discovered that existing formal policy, procedures, or regulations lacked sufficient information on defining how the equipment becomes a POR. The process is occurring; however, the documentation is lacking on how the Army incorporates a materiel solution developed for a specific combat mission into the routine training and doctrine to become a POR.

The Urgent Needs Process

During the course of operations in OEF, OIF, and encounters with the enemy, a need continually existed to rapidly identify and field new capabilities quickly to avoid the failure of the operational mission or catastrophic events. Established during the 1980s, the role of the Operational Needs Statement (ONS) process expanded because of the OEF and OIF operations and the 1990s' Gulf War conflict. According to a U.S. Government Accountability Office (GAO, 2010) report, the Army receives over 300 ONS requests per month. The ONS process is comprised of three elements: requirements determination, resourcing, and development of materiel solutions (including operations and maintenance). The ONS requests range from a need for new capabilities to training equipment for mobilizing units (GAO, 2010).

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According to Army Regulation (AR) 71-9, fulfillment of an ONS passes through several phases: initiation, theater endorsement, command validation, headquarters approval, funding, contract award, and initial fielding (DA, 2009). At first, assessment of the need occurs to determine if fulfillment can occur at the field commander's level. If the need is greater than what the local resources can accommodate, and if it is strictly an Army requirement, it processes through the Army chain of command. The combatant commander prioritizes the need based on whether it will jeopardize soldiers' lives or mission accomplishment if not fulfilled. It is important to note that the ONS is not a Joint Capabilities Integration and Development System (JCIDS) document, and it is not intended for redistribution of equipment already fielded. It is an opportunity for needs validation and sourcing of an identified capability gap (DA, 2009).

As identified by GAO in its 2011 report, one option is a "10-line capability gap" statement sent directly to the U.S. Army Rapid Equipping Force (REF) to start the process, followed by an ONS. The 10 lines included on the "REF 10-Liner" are as follows (GAO, 2011):

1. Problem

2. Justification

3. System characteristics

4. Operational concept

5. Organizational concept

6. Procurement objective

7. Support requirements

8. Availability

9. Recommendation

10. Coordination and accomplishment

The GAO (2011) report identified six activities that are involved in meeting urgent needs: validation, facilitation, sourcing, execution, tracking, and transition/termination/transfer. Interestingly, AR 71-9 does not identify the last category for the actual disposition of the system of equipment once developed. Extracted from the GAO report, Table 1 identifies the key activities and defines the resulting actions.

TABLE 1: ACTIVITIES INVOLVED IN MEETING URGENT NEEDS (GAO, 2011)

Key Activity	Definition
Validation	An urgent need request is received from theater and reviewed for validation by a headquarters entity. Validation involves an "in-house" review of an urgent need request to determine if it meets criteria to be recognized as an urgent operational need and, thus, whether it should continue through the process.
Facilitation	The requirements, costs, potential solution, funding, and other factors related to the course of action for the fulfillment of the urgent need are developed and coordinated between various entities. This can include, but is not limited to, coordination between validation and solution-development entities, coordination of requirements, and knowledge sharing.
Sourcing	Approval of the proposed course of action and assignment of a sponsor who will carry out a course of action/potential solution.
Execution	The approved solution is developed and fielded. This includes the acquisition, testing, and other activities involved in solution development.
Tracking	Collection of feedback from the warfighter regarding whether the solution met the urgent need request; also collection of performance data regarding course of action and solution.
Transition, Transfer, or Terminate	The decision regarding the final disposition of the capability in terms of whether it will be (a) transitioned to a program of record if it addresses an enduring capability need; (b) transferred to an interim sponsor for temporary funding if it addresses a temporary capability that is not enduring, but needs to be maintained for some period; or (c) terminated if it addresses a niche capability that is not enduring, nor is it to be maintained for current operations.

Note. Adapted from "Warfighter Support: DoD's Urgent Needs Processes Need a More Comprehensive Approach and Evaluation for Potential Consolidation," by Government Accountability Office, Report No. GAO-11-273, Washington DC, 2011.

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TABLE 2. ROLES OF U.S. ARMY ENTITIES IN URGENT NEEDS

Service/ Joint	Entity Involved in Urgent Needs	Validation	Facilitation	Sourcing	Execution	Tracking	Transition, Transfer, or Terminate
Army	Deputy Chief of Staff, Army G-3/5/7, Current and Future Warfighting Capabilities Division	✓	✓	✓		✓	✓
	Biometrics Identity Management Agency		✓	✓		✓	
	Asymmetric Warfare Group		✓				
	Rapid Fielding Initiative				✓		
	Rapid Equipping Force	✓	✓	✓	✓	✓	✓
	Army Capabilities Integration Center, U.S. Army Training & Doctrine Command					✓	✓
	PM or PEO				✓	✓	

Note. Adapted from "Warfighter Support: DoD's Urgent Needs Processes Need a More Comprehensive Approach and Evaluation for Potential Consolidation," by Government Accountability Office, Report No. GAO-11-273, Washington DC, 2011.

The fulfillment of an urgent need that the U.S. Army seeks to resolve involves seven different U.S. Army entities. Table 2 identifies the organizations and indicates what roles (activities) these organizations play in the resolution of urgent needs/ONS. Joint organizations and other military services, however, are not included in this table.

As reflected in Table 2, multiple organizations process and validate urgent needs. For the U.S. Army, an urgent need can be submitted via two routes: a request can be submitted to the REF for approval by the director of the REF (the REF 10-Liner); or a request can be submitted via the ONS (GAO, 2011). Important to note is that validation of an Army ONS is by the Deputy Chief of Staff (DCS), G3/5/7, with resourcing by the DCS, G-4; Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA/ALT); Army Materiel Command (AMC); or the REF that provides the resourcing solution with sustaining and follow-on procurement guidance (DA, 2009).

Solutions normally take 3 to 6 months with a Commercial-Off-The-Shelf (COTS) solution or 12 to 18 months if such solutions require new technologies. A normal acquisition may not deliver a capability for 3 to 5 years (Defense Science Board Task Force [DSBTF], 2009). According to the DSBTF report, the unit submitting the ONS often includes a materiel solution, along with the mission need and identification of the capability gap. The ONS is sometimes satisfied with a COTS solution, possibly modified to meet the intended need. Further, this DSBTF (2009) reported:

[An] increasing need for formal or informal transition paths from rapid solution to enduring acquisition. One effort in this area is the Army's Capabilities Development for Rapid Transition (CDRT) effort. CDRT identifies new technologies and capabilities in use in theater, evaluates their applicability to the Army at large, and makes recommendations for transitioning these technologies for Army-wide application and sustainment. (p. 9)

JCIDS and the ONS Process

According to the Chairman Joint Chiefs of Staff Instruction (CJCSI).01H, materiel solutions that are validated do not require a Capabilities Development Document (CDD) or Capabilities Production Document (CPD) during the rapid acquisition process unless they have been designated as a Major Defense Acquisition Program, a Major Automated Information System, or are designated Acquisition Category

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(ACAT) ID (Chairman, Joint Chiefs of Staff [CJCS], 2012). In this case, the Defense Acquisition Executive requires preparation of a CDD or CPD The CDD and CPD may be required to support transition of an urgent requirement to an Acquisition Program Candidate (APC). Within 90 days of rapid equipping to the field, a sponsor such as REF will provide an assessment of whether the solution was a failure or limited success, or success of a limited-duration requirement or success of an enduring requirement.

The Service Functional Capabilities Board (FCB) will establish joint priorities for every ONS. The FCB is "a permanently established body that is responsible for the organization, analysis, and prioritization of joint warfighter capabilities within an assigned functional area" (ACAT, 2013). Eight FCBs establish joint priorities:

1. Command and Control–Joint Forces Command with J6

2. Battlespace Awareness

3. Net Centric Operations

4. Force Application

5. Focused Logistics

6. Protection

7. Force Management

8. Joint Training

Joint requirements must satisfy Title 10, USC, section 181 statutory requirements according to CJCSI 3170.01H (CJCS, 2012). Figure 1 reflects the process for the evolution of an ONS from initiation to satisfaction.

Organizations Involved in Resolution of Urgent Needs

The organizations examined in this article that support, develop, and equip the force as a result of capability gaps are the Joint Improvised Explosive Device Defeat Organization (JIEDDO), Asymmetric Warfare Group (AWG), REF, and the Army Capabilities Integration Center. These organizations support and respond to the urgent needs of the Army warfighter.

FIGURE 1: U.S. ARMY PROCESS TO REVIEW, VALIDATE, AND ASSIGN RESOURCES TO AN ONS
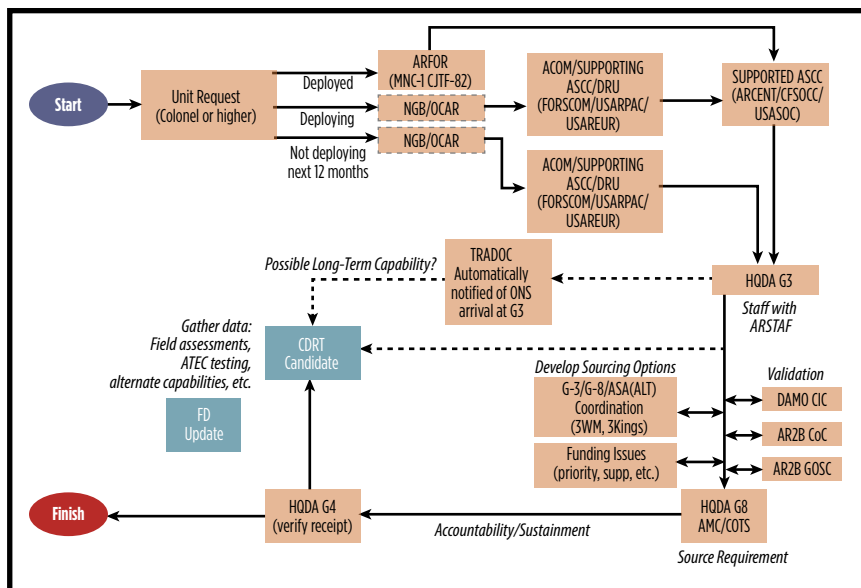
Note. Adapted from "Fulfillment of Urgent Operational Needs," by the Defense Science Board Task Force, Washington, DC, 2009.

Interestingly, the DSBTF found that within the DoD, numerous organizations were involved in developing solutions to urgent requirements. The task force found "more than 20 ad hoc, independent, quasi-institutionalized organizations addressing warfighter urgent needs" (DSBTF, 2009). All are attempting to develop rapid capability.

Our soldiers performing missions in Afghanistan and Iraq began to face a new threat—Improvised Explosive Devices (IED). Increasingly employed by insurgents, IEDs became a strategic element of insurgent operations. As casualties mounted, a number of joint task forces were formed, which culminated in the formation of the JIEDDO in February 2006 (DoD, 2006).

Formation of the JIEDDO created a joint organization whose primary mission was to reduce, eliminate, and defeat IEDs that insurgents were using against U.S. and coalition forces. Further, the organization was to train the joint forces in techniques to mitigate the effects and reduce insurgent IED activities through surveillance, technology, reconnaissance, training, and research; and through resourcing Doctrine,

Organization, Training, Materiel, Leadership and Education, Personnel and Facilities, (DOTMLPF) solutions. Part of the JIEDDO mission is rapid acquisition of the needed equipment materiel solutions. Each of the initiatives can be valued up to $25 million by the director of JIEDDO. Once developed, if proven initiatives are effective in use, JIEDDO is responsible to develop a plan for transitioning needed equipment materiel solutions to a POR for sustainment and further integration into the DoD system (DoD, 2006).

In November 2011, the AWG became part of the U.S. Army Training and Doctrine Command (TRADOC). The U.S. Army developed the AWG to assist in the transformation of the Army and to provide operational support of the Army and Joint Force commander (Office of the Director of the Army Staff, 2012). During the predeployment phase and while in the theater of operations, the AWG functions to enhance survivability and combat effectiveness of the soldiers. The AWG provides analysis, observations, and advisory support to the Army and the Joint Force to enable the defeat of asymmetric threats and methods.

As part of their mission, the AWG deploys worldwide, observing and analyzing evolving threats. From these observations in an operational environment, solutions are developed, capability gaps are identified, tactical observations are translated into Title 10 policy, and resource

implications are addressed. The AWG has forward-deployed operational cells that are responsible to target enemy vulnerabilities through the development-and-solution validation. These cells also enhance situational awareness (Office of the Director of the Army Staff, 2012).

The AWG has a partnership with the JIEDDO in the counter-IED fight. Continuous coordination ensures that efforts are complementary and not redundant. In addition, the group works with the offices of other agencies in the defeat of asymmetric threats. It also has a presence in each of the combatant commands; this allows it to have first-hand observations. The AWG personnel have the ability to identify enemy tactics as well as their techniques and action, because they embed with the operational units while conducting missions in the area of operations. The AWG also provides advisory assistance to units prior to deployment in an effort to mitigate the threat (Mis, 2011).
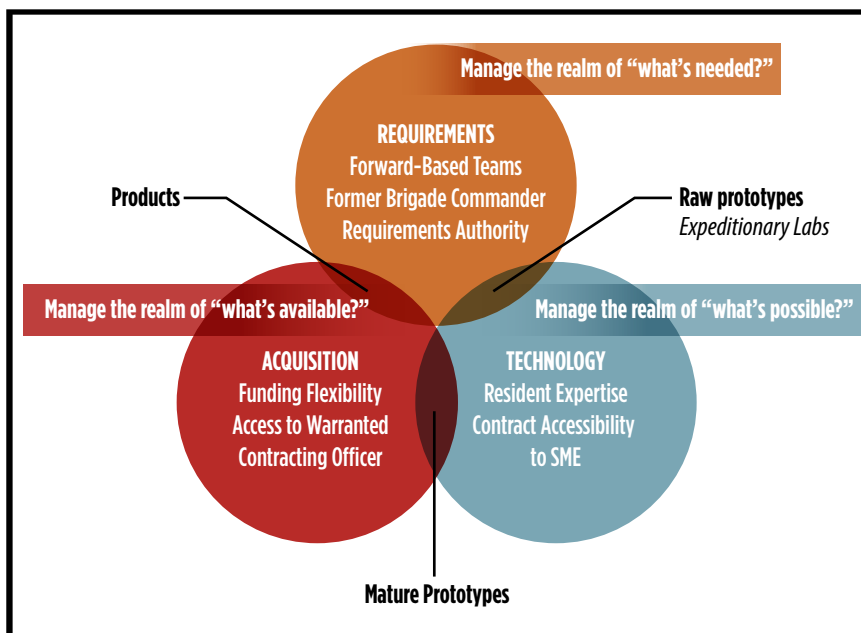
Because of operations in OEF and OIF, the Army began to emphasize the need to respond to urgent needs of the operational units. While the equipment deployed by the Army generally met mission requirements, new threats were emerging that required different capabilities to counter the threat quickly. The acquisition system, with its perceived cumbersome and deliberate processes and budget system did not allow quick acquisition to fill the capability gap. As a result, in October 2002 the Vice Chief of Staff of the Army established the REF. The organization was funded by Overseas Contingency Operations (OCO) money. The REF is a staff support agency assigned to the Army G3 (United States Army, n.d.). According to retired Army General Peter J. Schoomaker, the intent of the REF efforts is to "improve mission capability while reducing risk to our soldiers."

The primary purpose of the REF is to provide COTS of near-term developmental items—usually Technology Readiness Level (TRL) 6 or better—to satisfy urgent needs identified by operational units in OEF and OIF. A TRL rating falls on a 1–9 scale, with 1 being a concept study and 9 a fielded capability. The REF works directly with the commanders in the field to determine solutions that will meet the need. Once the REF identifies a solution, a limited quantity of the item designed to meet specialized capabilities goes to specific operational units. These solutions are not items that are currently available in the Army logistics system (Beasley, 2010a).

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The solution selected must meet the operational need. As depicted in Figure 2, the REF's critical capabilities focus is on what is available, what is possible, and what the warfighter needs. Equipment sent to the field sometimes has limitations. A 90-day goal is set for meeting the requirement and developing a solution. Drawbacks, however, are inherent to equipping troops quickly with systems, especially those systems that have yet to complete all required testing to meet environmental conditions. Soldiers identify flaws in a system once these systems are used in the operational environment. A degree of risk is associated with equipping deployed units with new equipment in the abbreviated timeline—weeks and months versus years. Figure 3 compares the normal acquisition timeline that is used to "field" new systems of equipment versus "equipping," which is a rapid solution to a capability gap. As stated on the REF Web site, "the Commander, Central Command endorsed the notion of immature prototypes that could be made available quickly. A 51 percent solution is good enough" (United States Army, n.d.). The other primary differences are that under normal acquisition, more documents are required to complete the process and different sources of funding. Documentation such as the Initial Capabilities Document (ICD), CDD, and CPD are all required before fielding a normal acquisition program.

The personnel assigned to the REF work directly with the soldiers in the operational environment. Update of requirements occurs through exposure to soldier requirements (Beasley, 2010a). The REF personnel are actively participating in the operational environment, and developing requirements and solutions in real-time versus waiting for submission of requirements and monitoring their progress through the normal chain of command. Solutions bypass many of the normal acquisition and decision-making processes, and the units are equipped in a much shorter time. One drawback of this approach is that other units may not be aware of a solution, which they may also need.
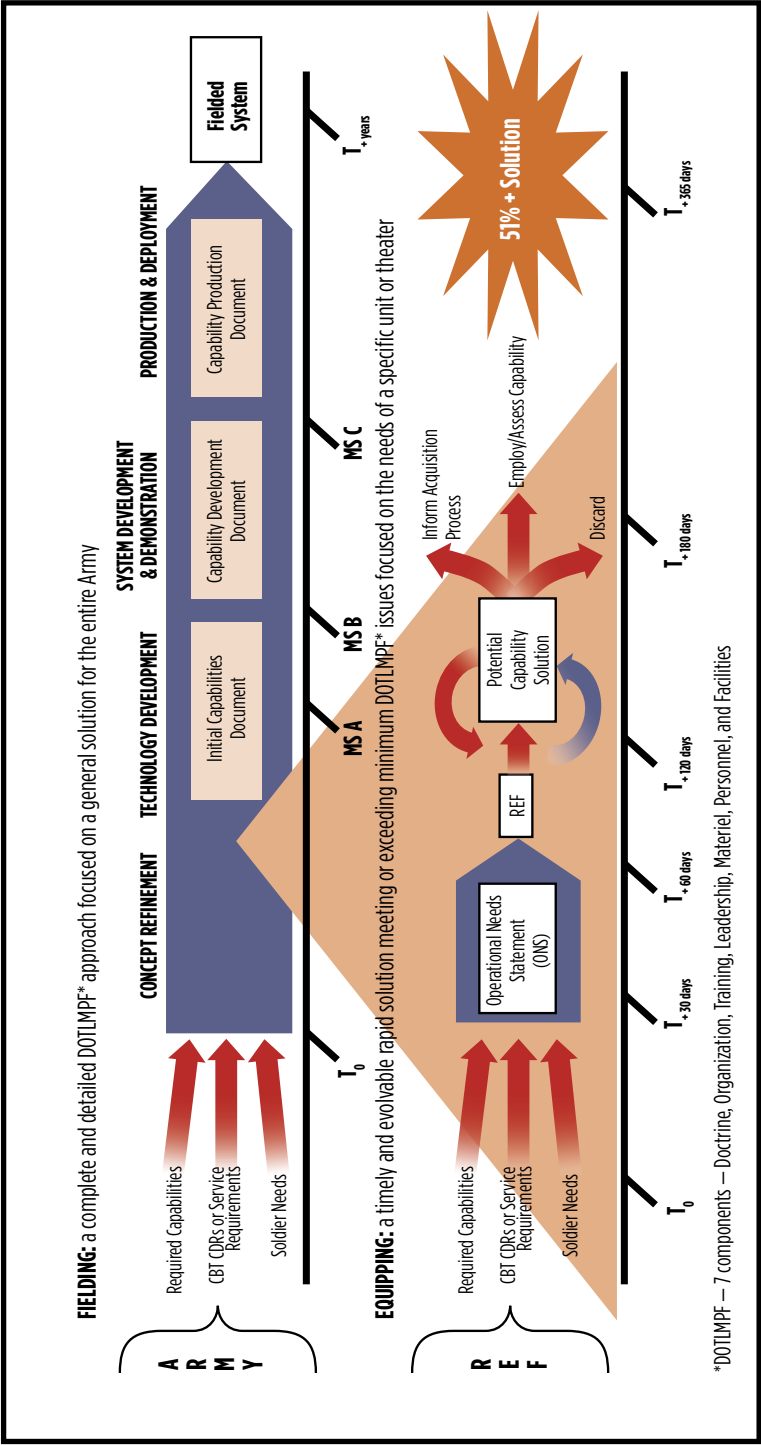
In January 2013, the Chief of Staff of the Army announced that the REF would become a formal Army organization (INSIDEDEFENSE. COM, 2013). The REF is an organization that adds value to the acquisition process by developing equipment and equipping units with materiel solutions using an abbreviated acquisition timeline.

FIGURE 2. RAPID EQUIPPING FORCE CRITICAL CAPABILITIES

Manage the realm of "what's needed?"

REQUIREMENTS
Forward-Based Teams
Former Brigade Commander
Requirements Authority

Products

Raw prototypes
Expeditionary Labs

Manage the realm of "what's available?"

Manage the realm of "what's possible?"

ACQUISITION
Funding Flexibility
Access to Warranted
Contracting Officer

TECHNOLOGY
Resident Expertise
Contract Accessibility
to SME

Mature Prototypes

The Rapid Fielding Initiative (RFI) is an Army program that ensures the rapid procurement of equipment provided to soldiers who are deploying. The equipment is generally individual and unit equipment. The RFI development was in response to shortages of supplies at the beginning of OIF in 2002. The current budget did not allow soldiers and units to have needed equipment available when they deployed, and the timeline for receiving the equipment was too long. The units' soldiers were procuring the equipment themselves (Carter, 2007). Becoming aware of the equipment shortages, the Chief of Staff of the Army directed "the Program Executive Officer for Soldier Systems (PEO Soldier) with equipping all soldiers with the Soldier as a System Integrated Concept Team equipment list to support both OIF and OEF" (Carter, 2007).

The RFI leverages existing procurements, COTS items, and lessons learned from OEF and OIF. It also distributes mission-essential equipment to every soldier deploying to the theater of operations. The mission, which ended in 2007, is now continuing indefinitely. Originally, the RFI focused on unit-based fielding, but has shifted to "role-based fielding, which considers each soldier's function and each unit's mission when planning and

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FIGURE 3: FIELDING VERSUS EQUIPPING

FIELDING: a complete and detailed DOTLMPF* approach focused on a general solution for the entire Army

EQUIPPING: a timely and evolvable rapid solution meeting or exceeding minimum DOTLMPF* issues focused on the needs of a specific unit or theater

*DOTLMPF — 7 components — Doctrine, Organization, Training, Leadership, Materiel, Personnel, and Facilities

executing predeployment fielding" (DA, 2009b). Further, the reduction of turnaround time for getting needed supplies and equipment to the foxhole has been reduced from months and years to days or even weeks.

Another organization involved in the identification of future force needs is the Army Capabilities Integration Center (ARCIC). As stated on their Web site, the "ARCIC is subordinate to TRADOC, which develops, educates, and trains soldiers, civilians, and leaders; supports unit training; and designs, builds, and integrates a versatile mix of capabilities, formations, and equipment to strengthen the U.S. Army as America's Force of Decisive Action" (ARCIC, n.d.). The ARCIC also develops concepts, providing strategic and operational direction, and evaluates capabilities needed for the future force in operational environments in support of combatant commanders.

Concepts are the efforts that the Army must exert that allow the development of specific capabilities the Army needs to provide land power to the Joint Force commander. Solutions to provide needed capabilities may cross one or more of the components of DOTMLPF (ARCIC, n.d.). According to a GAO (2011) report, the ARCIC is involved primarily in tracking and the transition, transfer, or termination of a program generated by an urgent need (GAO, 2011). The ARCIC, as described in TRADOC Regulation (TR) 71-20, is also responsible to conduct the CDRT initiative (DA, 2013).

The Urgent Materiel Release (UMR) Process

The materiel release procedures are prescribed in AR 700-142 (DA, 2008). Even though an item is filling an urgent capability shortfall, the process endures. Materiel release is required for all nonexpendable materiel; high-density military expendables; materiel procured by the Defense Logistics Agency; jointly developed materiel; materiel procured by another Service; and software or block updates.

The process and procedures for materiel slated to fulfill an urgent requirement constitute an abbreviated process called Urgent Materiel Release (UMR). The materiel will be required to meet minimum safety requirements and be suitable for use based on a validated user request or a directed requirement. To receive a UMR, the following data are required: requirement documentation such as the ONS or DA-directed requirement memorandum; a safety and health data sheet with a risk assessment; airworthiness statement; program manager (PM) request for

user acceptance; transportability statement; explosive ordnance device statement; transportability statement; and Army Test and Evaluation Command (ATEC)/Developmental Test Command input (Dunn, 2013).

Seven votes are required from the Materiel Release Review Board members to recommend approval of a UMR. The UMR must indicate any capabilities, limitations, hazards, and restrictions labeled on the equipment. An item deployed to the field for satisfying a particular need because of an ONS is an approved UMR; approved use of the item is for that need only. The UMR, once granted, is valid for the duration of the conflict in theater. However, updated safety and airworthiness certifications are required each year. Once the equipment is received, the user must provide an acceptance statement. If the piece of equipment is deemed useful somewhere else, the creation of a new ONS is required; and it must process through the materiel release process to receive a release prior to fielding. It is important to note that most of the equipment fielded has a TRL of 6 or 7 (Dunn, 2013). At TRL 6–7, demonstration of the system in a relevant operational environment has been done (DoD, 2011).

Capabilities Development for Rapid Transition (CDRT)

In August 2010, Secretary of the Army John M. McHugh signed an interim policy along with procedural guidelines for the management of rapidly fielded systems of equipment that have been designated as sustain, terminate, or transition to a PM for overall management. The decision process for the disposition of these systems was through the CDRT. The CDRT is a quarterly process used within the Army to identify the best of the nonstandard materiel and nonmateriel insertions that the Army should consider as enduring (Thomson, 2011). As was mentioned earlier, the CDRT is an ARCIC function. The equipment covered under the CDRT process is for commercially procured, nondevelopmental equipment or nonmateriel insertions. All of the equipment procurement occurs outside of the normal DoD budget resource process (McHugh, 2010).

The CDRT defines the equipment to be one of three categories: sustain, terminate, or APC enduring transition. Figure 4 provides a definition of each of these categories.

The CDRT process has five major steps: identify, assess, recommend, validate, and approve. Figure 5 further maps the elements of each step sequentially.

FIGURE 4. CAPABILITIES DEVELOPMENT FOR RAPID TRANSITION PROCESS CATEGORY DEFINITIONS

Acquisition Program Candidate or Enduring Nonmateriel Capability

Fills current operational need, theater-proven, is applicable to entire Army and to Future Force

Enters JCIDS process at Milestone B or C, or merges into existing program

Intended to compete in Program Objective Memorandum

Sustain with bridge resourcing strategy through OCO funding

Sustain Capabilities

Fills a current theater operational need, but no broad application to entire Army or useful to Future Force

Not recommended as acquisition enduring capability at this time – theater use only

Sustain in theater with OCO funding

Conside HQDA-directed nonstandard equipment disposition

Terminate Systems

Does not fulfill intended function adequately or performs unacceptably

Is obsolete, a better alternative is available, or it is being replaced now by an approved system

Further development and support not warranted

Not sustained by HQDA funding, but may be retained by unit and supported with unit funding (Exception: battle command systems must be turned in immediately)

Note. Adapted from "Switchblade: Lethal Miniature Aerial Munition System," by Accelerated Capabilities Division, Army Capabilities & Integration Center, Joint-Base Langley-Eustis, VA, 2012.

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## FIGURE 5: CAPABILITIES DEVELOPMENT FOR RAPID TRANSITION PROCESS
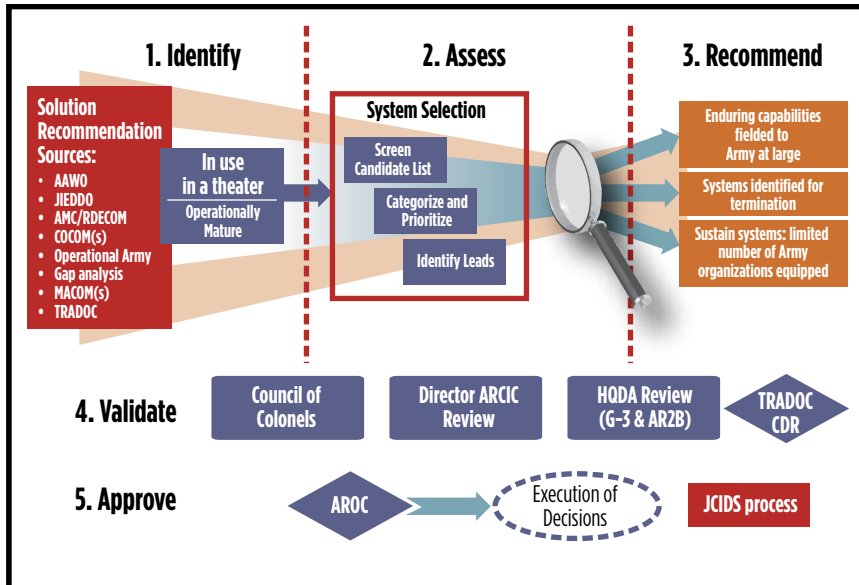
Note. Adapted from "Concept Development, Capabilities Determination, and Capabilities Integration," TR 71-20, U.S. Army Training & Doctrine Command, Joint Base Langley-Eustis, VA, 2013.

To summarize the process, several major Army organizations are stakeholders in the CDRT process, including Office of the Secretary of Defense/Joint Staff: Combatant Commands; operational theaters: Army G1, G2, G3/5/7, G6, and G8; Forces Command; AMC; ATEC; and TRADOC. The process operates on a 6-month schedule. Identification of programs for review occurs during the first and second month. The notional schedule includes 1 month of preparatory work that assists in establishing liaisons with major organizations. The second month consists of briefings and correspondence, followed by a month of field reviews of the potential candidates identified to assist in the prioritization of systems. In the fourth month, assessment, analysis, and review of the recommended candidate list occurs along with initial funding discussions with the G8. Validation, briefings, and a Council of Colonels (CoC) occurs during the fifth month. Also during the fifth month, ARCIC, the commanding general, and TRADOC are briefed and provided recommendations for approval of the CDRT decision. To close out the cycle, in the sixth month briefings are presented to the Vice Chief of Staff for the Army (VCSA) and the Army Requirements Oversight Council (AROC); these authorities then provide their approval,

if recommended. Figure 6 is the notional schedule reflected on a timeline with additional details of the actions that occur during the 6-month CDRT process (TRADOC, 2012).

Early in the process, a working group compiles a list of candidate systems. The criteria for CDRT eligibility are that the system must have been used by an operational unit in theater for a minimum of 120 days, fulfill a current need, and be applicable for the future force. Also, as further expanded by TR 71-20 (DA, 2013), the items must also be producible without major modifications and not part of an existing acquisition program. Operational assessments must have been conducted. The Director of ARCIC approves the initial list. The approval by ARCIC finalizes the list, and it is then voted on by operational units to make the system an APC, sustainment program, or determine whether it should be terminated. If the operational unit has not used the system, then they vote that they have not used the system (DA, 2013).

FIGURE 6. CAPABILITIES DEVELOPMENT FOR RAPID TRANSITION NOTIONAL SCHEDULE
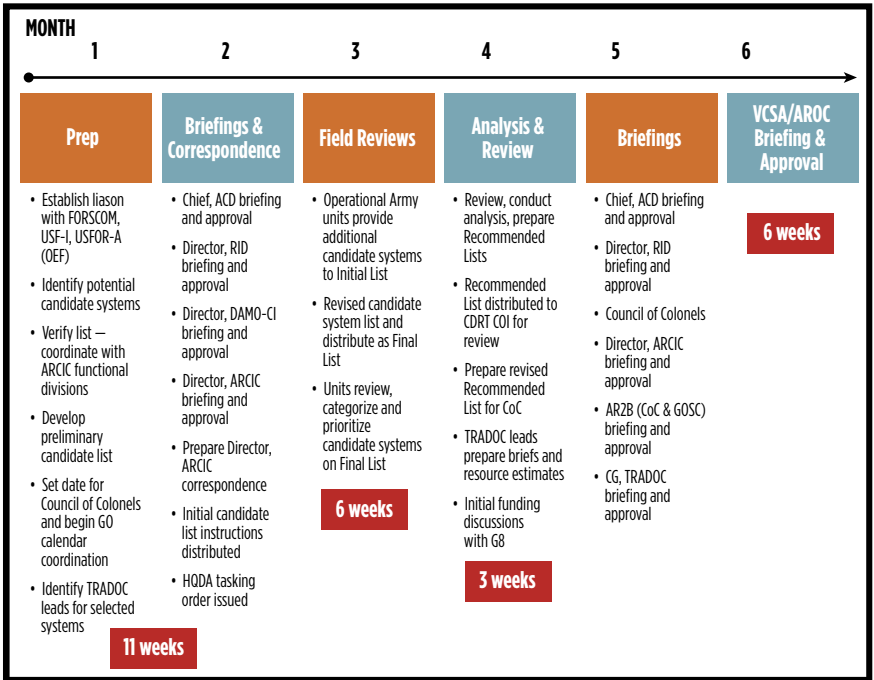
Note. Adapted from "Draft Capabilities Development Requirements Transition," by U.S. Army Training & Doctrine Command, Joint Base Langley-Eustis, VA, 2012.

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The CoC will review the compiled list. During the CoC, approval of the list occurs, and it then becomes the recommended list. Next, the AROC, chaired by the VCSA, is briefed for approval of the candidate items (Popps, 2008). With the approved list, Headquarters, Department of the Army (HQDA), through TRADOC, will task the schoolhouse or the combat developer to produce JCIDS documentation. Funding for the approved APC programs is not an automatic occurrence, but the system at this point would now be eligible to compete for needed funding.

Although validated ONS are sufficient for wartime or short-term efforts, the transfer to a formal acquisition program requires implementation of the JCIDS process to validate requirements. A provision in the CJCSI 3170.01 allows later entry into the defense acquisition life cycle for successfully performing systems. Often systems enter at the production phase. This provision includes nonstandard systems (CJCS, 2012).

Concerning the JCIDS process, AR 71-9 clearly states that the JCIDS development cycle may be reduced through use of the CDRT process. Analysis conducted may include operational assessments, an operating force survey, a subject matter expert assessment, HQDA-level CoC recommendation, and determination of a broad applicability; further, the combat developer (CBTDEV) may prepare a CPD. If the analysis conducted determines there is broad applicability, but that further development prior to transitioning to an acquisition program is required, CBTDEV may initiate a CDD (DA, 2009a). The regulation directs transfer of APC systems to the PEO or PM for life-cycle management. It is important that the transferring agency conduct initial coordination with the PEO or PM. Early coordination between rapid equipping agencies—such as the REF, PEO, or PM—is necessary for successful transfer. Once agreement is reached between the two groups, the Deputy for Acquisition and Systems Management, along with an official transfer memorandum signed by the ASA/ALT, assigns life-cycle management responsibilities to the designated PEO. A Memorandum of Agreement (MOA) between the equipping organizations such as the REF is developed, which will further define responsibilities, provide system information and programmatic documentation, and detail fund profiles (Popps, 2008).

Sustainment of APC systems in theater is with OCO funding. They will remain funded by OCO until Future Years Defense Plan (FYDP) funding is in place. Further, OCO and/or Reset funding is initially appropriate to perform retrograde if the equipment is returned prior to JCIDS

documentation being in place. The transition to the PEO or Life Cycle Management Command must occur quickly so that FYDP funding is not in jeopardy (McHugh, 2010).

Funding for sustainment of nonstandard equipment is different, and AMC or U.S. Army Medical Command (MEDCOM) is responsible for life-cycle management, budgeting, and programming for sustainment funding.

Funding for sustainment of nonstandard equipment is different, and AMC or U.S. Army Medical Command (MEDCOM) is responsible for life-cycle management, budgeting, and programming for sustainment funding. Some items may transfer to a PEO/PM for life-cycle management, resourced via supplemental appropriations (e.g., OCO). Once supplemental funding ceases to be available, the Army eliminates the use of sustainment items or these items will be required to re-compete via the CDRT process to become an APC maintained with Operations and Maintenance (O&M) funding. The originators, such as the REF, JIEDDO, AMC, or MEDCOM, complete a sustainment transfer plan. For those items in the sustainment category procured by the units, the units are responsible to develop an MOA with either the AMC or PEO/PM for sustainment actions. Units are not authorized to fund sustainment activities (McHugh, 2010).

Terminated items are no longer eligible to fill the same capability gap. Nevertheless, authorization of sustainment is possible for terminated items in theater if it fulfills another requirement and at some later point in time, will process through the CDRT as a redesignated item in a different category. Further, asset disposal, when no longer being used in theater, will be in accordance with existing regulations (McHugh, 2010).

Because of the CDRT process, if the item is designated as a retention item and becomes an APC or sustained, the item is required to go through a full materiel release. In addition to those items required for a UMR, additional actions required include analysis of how management of

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spares will occur, what the planned stock age levels will be, configuration management, and additional testing required prior to reuse. Assignment of Type Classification (TC) is another event (Dunn, 2013).

The TC is a process used to determine the level of acceptability of materiel for Army use. It integrates the acquisition process with the logistics processes. The TC provides data for logistics support, procurement, and other authorizations (DA, 2008).

Acquisition for Operational Needs Statement (ONS) Requirement

According to a Blue Ribbon Panel briefing regarding acquisition reform, indications are that acquisition for urgent needs generally has limited sources from which to procure, with limited competition (DSBTF, 2009). In fact, as previously mentioned, the ONS package may include a materiel solution. Considerations regarding Operations and Sustainment (O&S) such as life-cycle cost are secondary considerations in meeting an ONS requirement, and the contractor often provides them.

The process to meet an ONS requirement may allow a single prototype to go straight to production. For an ONS, requirements' costing is usually just preliminary, but sufficient enough to attain an allocation of resources. Systems engineering and testing for capabilities and limitations does occur for ONS procurements with limited documentation. An ONS requirement solution has limited performance assessments and root cause analysis (Beasley, 2010a).

For an urgent requirement, equipment selected to fill the capability gap may have a TRL of 6, and sometimes it may be materiel from science and technology programs. Preliminary Design Review for urgent requirements may only be ad hoc or limited.

An urgent requirement solution does not normally pass through Milestone A or B, so no certification for supportability is required in accordance with 10 United States Code § 2366a and § 2366b. Affordability assessments are usually not applicable to urgent need solutions.

Fulfillment of urgent need requirements means the acceptance of greater risk to provide a faster, usable capability to the warfighter. Addressing sustainment after the equipment is ready for deployment is normal for an urgent requirement (Beasley, 2010b).

A Case Study of the Lethal Miniature Aerial Munition System (LMAMS)

"LMAMS was my only option."
(Company Commander)

The LMAMS program was a Joint Component-required capability. The designated sponsor was the U.S. Special Operations Command (USSOCOM), with the lead agent being the U.S. Army Special Operations Command. The designated cosponsor was the U.S. Air Force Special Operations Command. Figure 7 illustrates the LMAMS.

As early as 2004, the need had surfaced for a small, lightweight munition system, capable of engaging enemy targets on top of/over, behind, and around buildings beyond the line of sight. The Defense Advanced Research Projects Agency (DARPA) and Raytheon Missile Systems identified a potential solution with the introduction of the Close Combat Lethal Recon (CCLR) (Kelly, 2009).

Beginning in 2006, U.S. Army and Air Force troops conducting overseas operations continued to identify a capability gap that CCLR did not meet while trying to identify hostile forces during urban fighting, or along convoy routes traveled during missions. Lessons learned from Mogadishu, OIF, and OEF reflected a requirement for a system that would "support the requirement for an organic beyond small arms effective fire, day/night capable, lethal miniature aerial munition capability" (Kelly, 2009). A JCIDS study was conducted that analyzed small, tactical unit tasks, tactics, and capability requirements. The tasks were common to all small dismounted combat units.

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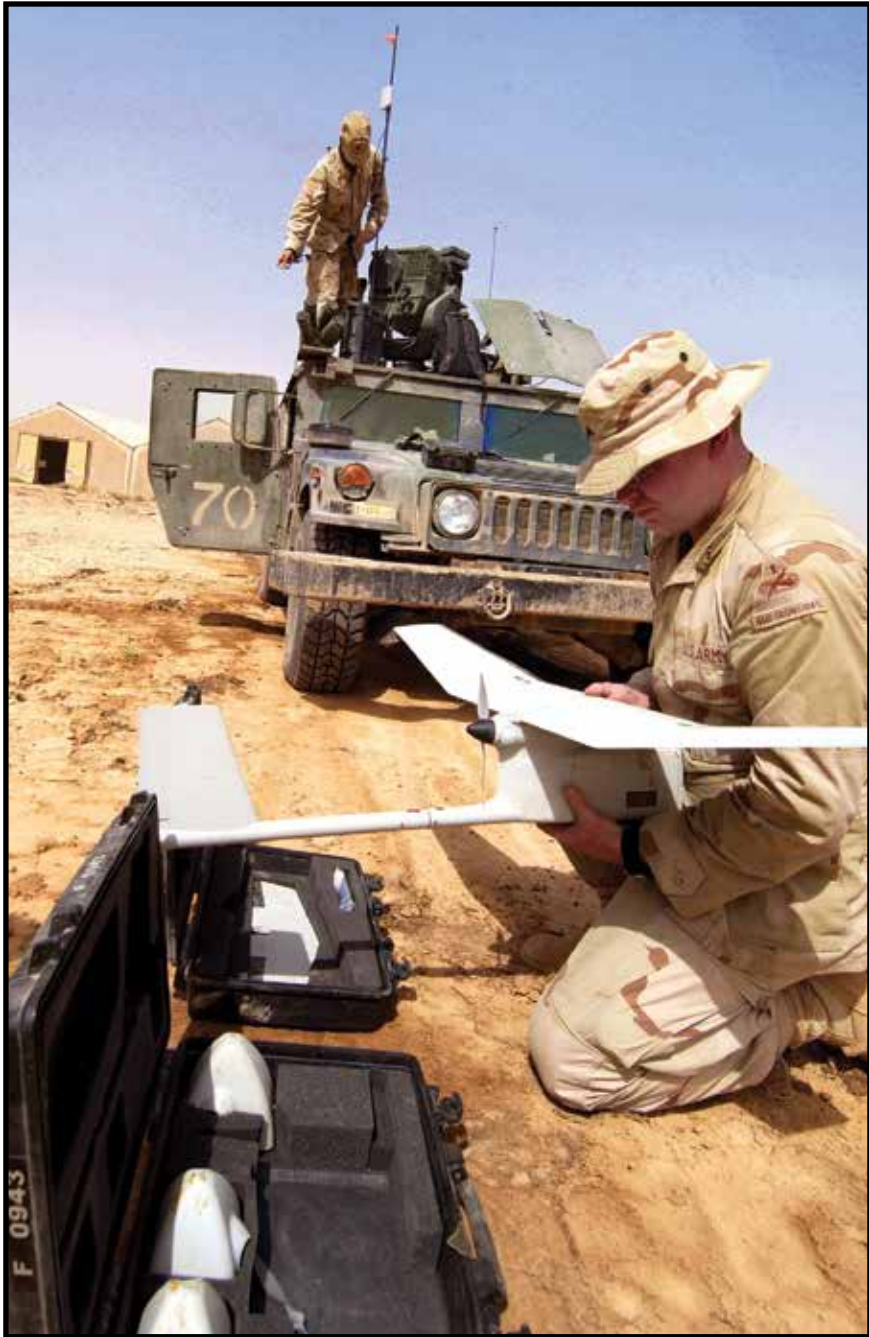**FIGURE 7. LETHAL MINIATURE AERIAL MUNITION SYSTEM (LMAMS)**

Photo Credit: DoD photo by Tech. Sergeant Russell E. Cooley IV, U.S. Air Force (released)

The USSOCOM signed an ICD for the LMAMS capability on October 27, 2008. The approval of the CDD occurred 1 year later, on October 30, 2009. The CDD defined a materiel solution that allowed team-sized operational units to dominate asymmetrical and conventional threats in close combat. The CDD stated that there were four materiel solutions capable of providing a solution to the capability gaps identified. The first included a small missile, the second was an Unmanned Aerial Vehicle (UAV), the third was a lethal rotary wing micro-UAV, and a fourth concept was a ground UAV airdropped weapon. However, based on the CDD, "a man-launched precision weapon may also provide capability in a case where direct line of sight is available, but team-level weapons do not have the range, accuracy, and effects to neutralize a target" (Kelly, 2009). The Analysis of Materiel Alternatives (AMA) within the CDD concluded that the "lethal aerial munition provides good combat effectiveness and mobility, with all threshold requirements met." The AMA is an integral part of the JCIDS process.

The U.S. Army Maneuver Center of Excellence (MCoE) requested approval by TRADOC of the CDD in November 2009. The approval request processed through the ARCIC to the U.S Army G-3. Approval of the final CDD by USSOCOM occurred in March 2011.

The ACD, which is a division under ARCIC; AWG; and the Close Combat Weapon System (CCWS) PM developed the initial version of the Concept of Operations (CONOPS) in mid-2010, which would serve as an operator and training manual. The manual included a system description/specifications, emergency procedures, and operational/ sustainment procedures. The ARCIC updated documentation later that year based on troop input and AWG findings. As indicated in Figure 8, the AWG establishes relationships with industry, user, PM, and life-cycle manager.

The Switchblade, manufactured by AeroVironment, met the LMAMS requirement and was used for the LMAMS operational assessment that was on the forefront. Essentially, the LMAMS is a guided missile, small enough to fit in a backpack, and capable of firing at a small target. The drone is a missile launched from a tube with cameras on board to scout an enemy position before soldiers send the information to the target.

FIGURE 8. ASYMMETRIC WARFARE GROUP RELATIONSHIPS
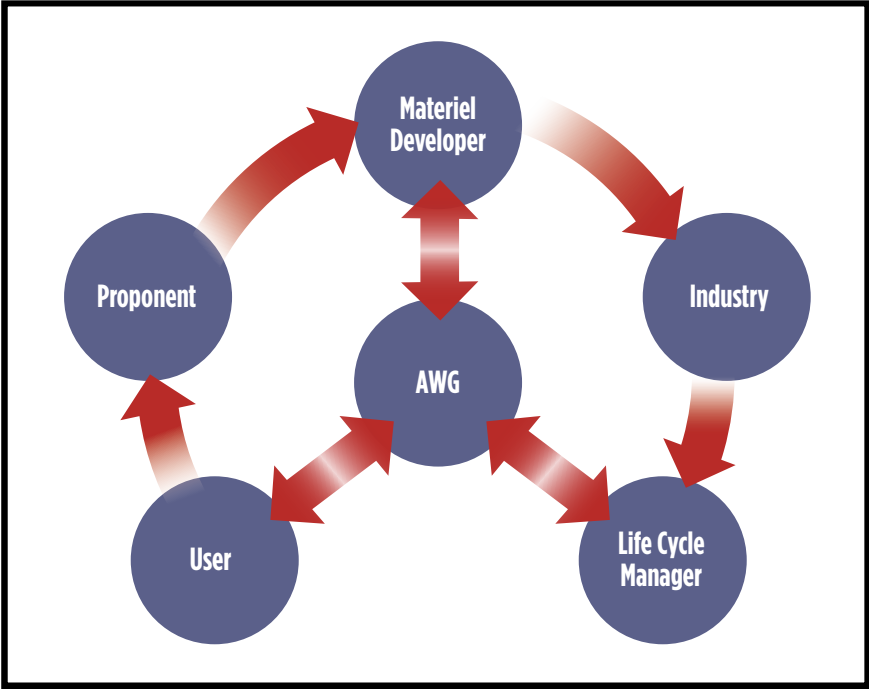
Note. Adapted from U.S. Army Asymmetric Warfare Group, *Military Training Technology, 16*(1), by C. J. Mis, 2011.

An AWG operational assessment was conducted to determine the potential viability of the LMAMS to meet the performance requirements necessary to eliminate the capability gap. The intent of the assessment was to verify and validate the concepts of employment and Tactics, Techniques, and Procedures. Recommendations for improvement were also possible (AWG, 2011).

The AWG methodology would build on live fires and previous testing completed by the Air Force. The AWG personnel deployed with operational units in Regional Command-East to employ 10 LMAMS munitions in support of combat operations. Engagement criteria and employment concepts determined to which embedded units the AWG personnel would be assigned (AWG, 2011).

The conduct of field assessments transpired from February 2010 through December 2010 in the Continental United States and in theater. The objectives of the assessments were to collect information,

including identification of improvements in the CONOPS, and to conduct a DOTMLPF review. Cost analysis was not included as part of the assessment of the Switchblade. Further, the report did not identify the Switchblade as the LMAMS requirement materiel solution.

The AWG conclusion showed LMAMS potential to provide small-unit capability to combat enemy insurgents. The LMAMS allowed units to avoid collateral damage and civilian casualties. Included in the AWG statement was that the LMAMS had significant potential as an enduring capability. The ACD recommended that the LMAMS "was a potential CDRT candidate, and to provide input for further JCIDS requirements development" (ACD, 2011).

A REF 10-Liner, submitted by a combat unit, came in for approval to the REF Milestone Decision Authority (MDA) in February 2011. A REF 10-Liner is a requirements document outlining the solution for an urgent need. In October 2011, the MDA approved the REF 10-Liner. The initial quantity submitted to the REF was to procure 75 units, accomplished via partnership with the CCWS PM and Program Executive Office Missiles and Space (PEO M&S). The REF provided funding to CCWS PM to develop, procure, test, train, and sustain the system for 6 months (ACD, 2011).

In early 2011, the findings of the AWG recommended the LMAMS as being the only option to respond to enemy fire in "Community of Practice" defense missions due to critical delay and time concerns. This situation proved the effectiveness of an organic weapon system, employed rapidly, while troops were in contact with the enemy and the situation was continuing to develop (AWG, 2011).

The activity on the Switchblade continued, and a contract was awarded for limited quantities of the Switchblade in June 2011. Initial training occurred in March/April 2012. Safety confirmation testing by ATEC occurred in June 2012. Action is now ongoing to prepare and staff the CPD and the acquisition strategy (Nichols, 2013). The goal for completion of the CPD is mid-FY 2014.

The staffing goal of the Maneuver Center of Excellence (MCoE) for the CPD to support a Milestone C decision is FY 2016. One important point—DARPA and the Raytheon Company provided the first demonstration of the LMAMS. The MCoE indicated that although the Switchblade

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by AeroVironment was the system used during various demonstrations and urgent equipping to the area of operations, the final materiel solution selected could be a different system. Also indicated, the MCoE agreed to leverage the existing ICD and CDD; therefore, developing the CPD for production would be the next action. A decision was based on results of the urgent equipping and lessons learned from the field. Further, LMAMS would be a candidate for CDRT in 2013 (Sando, 2012).

In January 2013, PEO M&S became the MDA. The Army Acquisition Executive designated the LMAMS as an ACAT III program (Shyu, 2013). According to LMAMS Product Director Bill Nichols, the LMAMS was scheduled on the agenda for the CDRT No. 17. In addition, the planned acquisition strategy will be a competitive procurement.

The Counter-Rocket Artillery and Mortar (C-RAM) Experience

Another PEO M&S program fielded in response to an urgent need was the C-RAM program. Responding to the ONS made by the Multi-National Force–Iraq (MNF-I), the C-RAM initiative was taken to counter attacks by the enemy of rockets, artillery, and mortars. Insurgents were "employing indirect-fire tactics of quick-attack, low-trajectory, urban terrain-masked rocket, artillery, and mortar strikes against U.S." (Corbett, 2012) Forward Operating Bases (FOB) in Iraq.

In 2004, Marine General Anthony Zinni, then-Commander, U.S. Central Command, received a JUONS approval with funding for an indirect fire intercept capability. ATEC sponsored a "proof of principle" competition for the sense-and-warn capability. A second test increment occurred in the spring of 2005 to validate the intercept capability. ATEC issued a capabilities and limitations report. By May 2005, a complete system was in the FOB. The result was a system of netted sensors and shooters from the Army, Navy, and private industry, comprised of four pillars of active defense: sense, warn, intercept, and respond (Rassen, 2011).

The C-RAM is a system of systems consisting of four pillars. Each of the systems that comprise the C-RAM has its own POR. The interface makes the system of systems a C-RAM. The C-RAM is now embedded at the FOBs in Afghanistan and Iraq (Walker, 2011). It has been to the

CDRT and is recognized as an enduring requirement. Since its rapid fielding, the system has undergone multiple improvements in response to lessons learned.

Rapid Acquisition and CDRT

Review of rapid acquisition and the CDRT process reveals some observations regarding both of these processes based on research documentation and interviews. Both processes—rapid acquisition and CDRT—grew out of an operational need. For rapid acquisition, it was a requirement to get equipment to the field faster than a normal acquisition program. CDRT grew out of a need to transition the rapidly acquired equipment into the U.S. supply system.

The acquisition process and contracting are not set up to provide quick responses, and sometimes are seemingly nonresponsive to what is perceived by units as an urgent need.

Threat, safety, budget, resources, and other factors drive many acquisition decisions. As a result, PMs are not always in control of the budget for rapid acquisitions. This certainly may handicap their programs, possibly in times of crucial decision making. The resources come from other organizations, and this makes it very difficult to manage successfully. Rapid acquisition does not work within the formal DoD budget process.

The acquisition process and contracting are not set up to provide quick responses, and sometimes are seemingly nonresponsive to what is perceived by units as an urgent need. Both of these processes are very deliberate and require not only providing a great deal of information, but also completing a great deal of required documentation. Additionally, sole-source requirements present a problem for acquisition. The lengthy documentation required for sole-source processing is time consuming. Further, updates to the Federal Acquisition Regulation (General Services Administration, DoD, & National Aeronautics & Space Administration, 2005) should include language to support contracting for materiel requirements to satisfy JUONS and ONS.

There was strong support for Integrated Process Teams to develop the materiel solution. Recognition by the REF of a materiel solution is a necessary component of a materiel urgent need, helping to gain support of the solution in theater. Additionally, the AWG is knowledgeable about the systems it sponsors, thus the group is able to prepare in-theater personnel and assets for what will be coming, while simultaneously remaining a strong advocate moving forward.

One issue surfaced when concerns were expressed regarding the rules of engagement for use of the weapon system: that the risk-averse fighting forces may be reluctant to use the system. Additionally, if leadership in theater does not embrace the system, then its acceptance at unit level will be problematic. Clear lines of communication are needed and time allowed for units to undergo orientation to, and training on, the system.

The CDRT process is not a final authority like the JCIDS. The current acquisition community focuses on the lengthy acquisition process. Further, current tenets prescribed for defense acquisition make delivery/acceptance of products difficult unless they have undergone the full complement of processes/actions required by the Defense Acquisition Framework. The enduring requirement APC will need to meet the required elements of the DoD 5000 series (DoD, 2003; 2008), and actions may be required to develop any incomplete JCIDS documentation. Further, the CDRT process does not culminate with the issuance of any documentation to support the decision for the equipment to be an enduring requirement, or that it should be considered a POR. Finally, when an enduring requirement recommendation occurs, no plans are currently in place to transition the requirement to a POR. Maintenance procedures, training methods, and sustainment practices would need to be documented.

The full complement of sustainment actions is often not complete. This could result in costly upgrades later. While the system was in the FOB, a contractor (most likely the original equipment manufacturer) often provided sustainment and training. The transition to organic support, if determined to be the best means, may be costly.

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"We can't have programs of record that are measured in decades; we have to have some agility in our capability cycle times."

—Terry J. Pudas, Office of Force Transformation
(Center for Strategic Leadership & Development, 2013)

Conclusions and Recommendations

The normal course of a POR adheres to the Defense Acquisition Framework, meeting milestone after milestone of what appears to the casual observer as an endless stream of reports, testing, and documentation. The PM complies with the rules, regulations detailed in the DoD 5000 series, and the other tenets prescribed for defense acquisition (DoD, 2003, 2008; General Services Administration et al., 2005). Milestone schedules for an acquisition program may span the timeframe of a decade. Typically, programs slip to the right, grow in cost, and may have budget instability. Acquisition programs that span a decade of planning, developing, and producing invariably could contain obsolete technologies once fielded.

Rapid acquisition of a solution for an identified capability gap to prevent the loss of human life is often required. Toward that end, a separate formalized acquisition process for urgent needs is also required.

Rapid acquisition of a solution for an identified capability gap to prevent the loss of human life is often required. Toward that end, a separate formalized acquisition process for urgent needs is also required. This is not a novel idea; the DSBTF, in their 2009 report recommended a dual acquisition process (DSBTF, 2009).

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For ONS solutions, completion of the JCIDS documentation can occur in parallel. The JCIDS documentation for the LMAMS is in development, the system is deploying to the field, and system improvements are developing while the system is actively engaging the enemy.

The establishment of timelines for completion of the milestone documentation for the urgent requirement solutions is required. For example, the goal for completion of the ICD is within 90 days of initiation of an ONS. Completion of documentation will allow for the timely transition to a POR.

The technologies for urgent requirement solutions are usually TRL 6 or greater. The system can continue to evolve after the rapid equipping via a development program or modifications. Evolutionary acquisition occurred with a great deal of success with the C-RAM system. The advantage of evolutionary acquisition is that the equipment is field-tested, changes needed because of actual field use are identified, and lessons learned provide valuable information to make any necessary improvements or changes. Action to modify JCIDS documentation is ongoing.

> *The advantage of evolutionary acquisition is that the equipment is field-tested, changes needed because of actual field use are identified, and lessons learned provide valuable information to make any necessary improvements or changes.*

All the testing JCIDS requires is not always completed, but sufficient testing results are available to determine capability and identify system limitations. The UMR process ensures that the proposed materiel solution meets or exceeds safety requirements. Receiving units must acknowledge and accept any known operational employment risks that the ONS solutions may identify. If units can report successful use of the equipment in the operational environment, a reduction in the amount of testing required is a recommendation. This is especially the case for mature technology solutions. For instance, the MCoE felt comfortable going straight to Milestone C and entering the production phase for the LMAMS.

There should be established steps that lead to production and fielding. The steps should then transition to production and O&M funding. Early identification of resource requirements will allow for incorporation into budget planning documentation. Approval of an ONS should kick off the establishment of a budget line. Planning for sustainment funding should begin at that time as well.

The United States went to war in OEF and OIF, and the warfighter was ill-equipped to defeat some of the evolving threats the enemy brought into the operations. Urgent solutions continue to counter the threat; some are not perfect. What remained were the new enduring capabilities that had not completed the laborious and deliberate acquisition process. The CDRT process evolved to bring these capabilities into the system as PORs, but the process remains incomplete.

The processes and procedures used to allow fulfillment of capability gaps by emerging technologies should continue because they can be effective.

Using examples such as the success of the LMAMS and the C-RAM, both systems were initially put into operation as a Quick Reaction Capability (QRC) or an ONS, indicating that these systems were effective in meeting the threat prior to completion of engineering and manufacturing development. They would later continue on a path to become PORs. Technologies were evolving while the system was in use in operational environments, to address the capability gap. Systems such as C-RAM continue to be improved, long after their initial introduction to the field, based on lessons learned in OEF and OIF. The processes and procedures used to allow fulfillment of capability gaps by emerging technologies should continue because they can be effective.

Existing regulations and policy are acceptable in a proactive planning cycle, but are not adequate to meet urgent user needs. Research shows that rapid acquisition procedures are effective, and can yield long-term capability for the warfighter.

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APPENDIX

List of Abbreviations and Acronyms

AAWO . . . . .Army Asymmetric Warfare Office

ACAT . . . . Acquisition Category

ACD. . . . . Accelerated Capabilities Division

ACOM. . . . . Army Command

AMA . .Analysis of Materiel Alternatives

AMC . . . . Army Materiel Command

APC. . . Acquisition Program Candidate

AR . . . . Army Regulation

AR2B . . . . Army Requirements and Resourcing Board

ARCENT . . . . U.S. Army Forces, U.S. Central Command

ARCIC . . . . Army Capabilities Integration Center

ARFOR. . . . . .Army Forces

AROC . . . . Army Requirements Oversight Council

ARSTA . . . . . . Army Staff, Headquarters Department of the Army

ASA(ALT) . . . . .Assistant Secretary of the Army (Acquisition, Logistics & Technology)

ASCC . . . . . . Army Service Component Command

ATEC. . . . . Army Test & Evaluation Command

AWG . . . . . .Asymmetric Warfare Group

CBTDEV. . . . . Combat Developer

CCWS. .Close Combat Weapon System

CDD . . . . .Capabilities Development Document

CDR. . . . . Commander

CDRT . . . Capabilities Development for Rapid Transition

CFSOCC. . . . .Combined Forces Special Operations Component Command

CIC . . . . .Commander in Chief

CITF . . . . .Criminal Investigation Task Force

CJCSI . . . . Chairman Joint Chiefs of Staff Instruction

CoC. . . . . .Council of Colonels

COCOM . . . . . . .Combatant Command

COI . . . . .Community of Interest

CONOPS . . . . . . Concept of Operations

COTS . . . . . .Commercial-Off-The-Shelf

CPD. . . . . .Capabilities Production Document

C-RAM . . . . . . .Counter-Rocket Artillery and Mortar

DA . . . . .Department of the Army

DAMO CIC. . . . . . Office of the Assistant Deputy Chief of Staff G3/5/7, Future Warfighting Capabilities Division

DCS. . . . . Deputy Chief of Staff

DoD. . . . . .Department of Defense

DOTMLPF . . . . . Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities

DRU. . . . . .Direct Reporting Unit

DSBTF . . . . Defense Science Board Task Force

FCB. . . . . Functional Capabilities Board

FD . . . . Force Development

FOB. . . . . .Forward Operating Base

FORSCOM. . . . . Forces Command

FYDP . . . . . . Future Years Defense Plan

GAO . . . . U.S. Government Accountability Office

GO. . . . . .General Officer

GOSC . . . . General Officer Steering Committee

HQDA. . . . . . Headquarters Department of the Army

ICD . . . . . . Initial Capabilities Document

IED . . . . . . Improvised Explosive Device

JCIDS . . . .Joint Capabilities Integration and Development System

JIEDDO . . . .Joint Improvised Explosive Device Defeat Organization

JUONS . . . . Joint Urgent Operational Needs

LMAMS . . . . Lethal Miniature Aerial Munition System

MAJCOM . . . . Major Command

MCoE . . . . U.S. Army Maneuver Center of Excellence

MDA . . . . Milestone Decision Authority

MEDCOM . . . . U.S. Army Medical Command

MNC . . . . Multi-National Corps – Iraq

MNF-I . . . . . . Multi-National Force – Iraq

MS . . . . Milestone

NGB . . . . National Guard Bureau

OCAR . . . . Office of the Chief Army Reserve

OCO . . . . Overseas Contingency Operations

OEF . . . . . Operation Enduring Freecom

OIF . . . . Operation Iraqi Freedom

ONS . . . . Operational Needs Statement

PEO M&S . . . . Program Executive Office Missiles and Space

POR . . . . Program of Record

RDECOM . . . . U.S. Army Research, Development and Engineering Command

REF . . . . Rapid Equipping Force

RID . . . . Requirements Integration Division

SME . . . . Subject Matter Expert

TC . . . . Type Classification

TR . . . . . . U.S. Army Training & Doctrine Command Regulation

TRADOC . . . . U.S. Army Training and Doctrine Command

TRL . . . . . . Technology Readiness Level

UMR . . . . Urgent Materiel Release

U.S. . . . . United States

USAREUR . . . . United States Army, Europe

USARPAC . . . . United States Army, Pacific

USASOC . . United States Army, Special Operations Command

USF-I . . . . U.S. Forces – Iraq

USFOR-A . . . . U.S. Forces – Afghanistan

VCSA . . Vice Chief of Staff of the Army